

Claims

Renumbered

## 1 AMENDMENTS TO THE CLAIMS

1 1. (previously presented) A method for producing a pigment, comprising:

2 a) adding a phosphorus compound to an aqueous suspension of titanium dioxide base material,  
3 then

4 b) adding a titanium compound; and

5 c) adding an aluminum compound,

6  
7 wherein no significant amount of zirconium compound is or has been added to the aqueous  
8 suspension of titanium dioxide base material; and then

9 d) adjusting the pH value of said suspension to a value of from 8 to 10; and then

10 e) adding a magnesium compound.

1 2. (Canceled)

2  
1 3. (Original) The method of claim 1, wherein the added phosphorus compound is an inorganic  
2 phosphorus compound.3  
1 4. (currently amended) The method of ~~claim 3~~<sup>2</sup> claim 1, wherein the inorganic phosphorus  
2 compound is selected from the group consisting of alkali phosphates, ammonium  
3 phosphates, polyphosphates, and phosphoric acid.4  
1 5. (Original) The method of claim 1, wherein the added phosphorus compound is 0.4 to 6.0%  
2 by weight calculated as P<sub>2</sub>O<sub>5</sub>, referred to TiO<sub>2</sub> base material in the suspension.

5  
1 6 (Original) The method of claim 5, wherein the added phosphorus compound is 1.0 to 4.0%  
2 by weight, calculated as  $P_2O_5$ , referred to  $TiO_2$  base material in the suspension.

6  
1 7 (Original) The method of claim 6, wherein the added phosphorus compound is 1.6 to 2.8%  
2 by weight, calculated as  $P_2O_5$ , referred to  $TiO_2$  base material in the suspension.

7  
1 8 (Original) The method of claim 1, wherein the titanium compound added is a hydrolyzable  
2 titanium compound.

7  
1 8 (Original) The method of claim 8, wherein the titanium compound added is selected from the  
2 group consisting of titanyl sulphate and titanyl chloride.

7  
1 9 (Original) The method of claim 8, wherein the quantity of titanium compound added is 0.1  
2 to 3.0% by weight, calculated as  $TiO_2$ , referred to  $TiO_2$  base material in the suspension.

9  
1 10 (Original) The method of claim 10, wherein the quantity of titanium compound added is  
2 0.1 to 1.5% by weight, referred to  $TiO_2$  base material in the suspension.

10  
1 11 (Original) The method of claim 11, wherein the quantity of titanium compound added is  
2 0.1 to 1.0% by weight, calculated as  $TiO_2$ , referred to  $TiO_2$  base material in the  
3 suspension.

12  
1 12 (Original) The method of claim 1, wherein the quantity of titanium compound added is 0.1  
2 to 1.0% by weight, calculated as  $TiO_2$ , referred to  $TiO_2$  base material in the suspension.

13  
1 14 (Original) The method of claim 1, wherein the aluminum compound added is alkaline.

14 13  
1 15. (Original) The method of claim 14, wherein the alkaline aluminum compound is selected  
2 from the group consisting of sodium aluminate, alkaline aluminum chloride, and alkaline  
3 aluminum nitrate.

15 13  
1 16. (Original) The method of claim 14, further comprising  
2 d) adjusting the pH value of the suspension to a value of from 8 to 10 after step c).

16 1  
1 17. (Original) The method of claim 1, wherein the aluminum compound added is acidic.

17 16  
1 18. (Original) The method of claim 17, further comprising:  
2 d) adjusting the pH value to a value between 8 and 10 by adding an alkaline aluminum  
3 compound.

18 16  
1 19. (Original) The method of claim 17, further comprising:  
2 d) adjusting the pH value to a value between 8 and 10 by adding an alkaline aluminum  
3 compound in combination with a base.

19  
1 20. (Original) The method of claim 1, wherein during the addition of the aluminum compound,  
2 the pH value of the suspension is maintained constant in the range from 2 to 10 by the  
3 simultaneous addition of a pH modifying compound.

20 19  
1 21. (Original) The method of claim 20, wherein during the addition of the aluminum compound,  
2 the pH value of the suspension is maintained constant in the range from 4 to 9 by the  
3 simultaneous addition of a pH modifying compound.

21 20  
1 22. (Original) The method of claim 21, wherein during the addition of the aluminum compound,

2 the pH value of the suspension is maintained constant in the range from 6 to 8 by the  
3 simultaneous addition of a pH modifying compound.

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1 23. (Original) The method of claim 1, wherein the total quantity of the aluminum compounds  
2 added is 2.0 to 7.5% by weight, calculated as  $Al_2O_3$ , referred to  $TiO_2$  base material

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1 24. (Original) The method of claim 23, wherein the total quantity of the aluminum compounds  
2 added is 3.5 to 7.5% by weight, calculated as  $Al_2O_3$ , referred to  $TiO_2$  base material.

1 25. (Canceled)

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1 26. (previously presented) The method of claim 1, wherein the magnesium compound added is  
2 selected from the group consisting of magnesium sulphate and magnesium chloride.

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1 27. (previously presented) The method of claim 1, wherein the quantity of magnesium  
2 compound added is 0.1 to 1.0% by weight, calculated as  $MgO$ , referred to  $TiO_2$  base  
3 material in the suspension.

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1 28. (Original) The method of claim 27, wherein the quantity of magnesium compound added is  
2 0.2 to 0.5% by weight, calculated as  $MgO$ , referred to  $TiO_2$  base material in the  
3 suspension.

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1 29. (previously presented) The method of claim 1, further comprising

2 f) treating the pigment with an added material in order to influence the final pH value of the  
3 suspension wherein the final pH value of the pigment is controlled by the pH and the quantity of  
4 the added material.

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1 30. (Original) The method of claim 29, where the added material is a nitrate compound.

1 <sup>29</sup> 31. (Original) The method of claim <sup>28</sup> 30, where the finished pigment contains up to 1.0% by  
2 weight NO<sub>3</sub>.

1 32. (canceled)

1 33. (canceled)

1 <sup>30</sup>  
34. (Original) The method of claim 1, where the titanium dioxide base material is milled before  
2 step a).

1 <sup>31</sup> 35. (Original) The method of claim <sup>30</sup> 34, where the titanium dioxide base material is wet-milled  
2 and where a dispersant is added during milling.

1 36-39. (canceled)

32  
40. (previously presented) A material, comprising;  
a titanium dioxide pigment material; the titanium dioxide comprising  $\text{TiO}_2$  particles, each particle having a surface;  
phosphorus containing material attached to the surface of each particle;  
titanium containing material additional to the titanium dioxide material of the surface attached to the phosphorus containing material; and  
aluminum containing material attached to the titanium containing material additional to the titanium dioxide material of the surface, and;

9 magnesium containing material attached to the aluminum containing material.

1 41. (Canceled)

1 <sup>33</sup>  
~~42.~~ (previously presented) The material of claim <sup>32</sup>~~40~~, further comprising;

2 nitrate containing material attached to the aluminum containing material.

1 <sup>35</sup>  
~~43.~~ (previously presented) The material of claim <sup>32</sup>~~40~~, further comprising;

2 nitrate and magnesium containing material attached to the aluminum containing material.

1 <sup>37</sup>  
~~44.~~ (previously presented) The material of claim <sup>32</sup>~~40~~, wherein the resultant particles contain an  
2 insignificant amount of zirconium.

1 <sup>39</sup>  
~~45.~~ (previously presented) The material of claim <sup>32</sup>~~40~~, wherein the titanium dioxide pigment  
2 material is incorporated into a decorative laminated paper.

1 46. (canceled)

1 <sup>34</sup><sup>40</sup>  
~~47.~~ (previously presented) The material of claim <sup>32</sup>~~40~~, wherein the titanium dioxide pigment  
2 material is incorporated into a decorative laminated paper.

1 <sup>34</sup>  
~~48.~~ (previously presented) The material of claim <sup>33</sup>~~42~~, wherein the titanium dioxide pigment  
2 material is incorporated into a decorative laminated paper.

1 <sup>36</sup>  
~~49.~~ (previously presented) The material of claim <sup>33</sup>~~43~~, wherein the titanium dioxide pigment  
2 material is incorporated into a decorative laminated paper.

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1 39. (previously presented) The material of claim 37, wherein the titanium dioxide pigment  
2 material is incorporated into a decorative laminated paper.

1 51. (Canceled)

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1 52. (previously presented) A method for producing a pigment, comprising:

2 a) adding a phosphorus compound to an aqueous suspension of titanium dioxide base material,  
3 then

4 b) adding a titanium compound; and

5 c) adding an acidic aluminum compound wherein no significant amount of zirconium compound  
6 is or has been added to the aqueous suspension of titanium dioxide base material; and then

7 d) adjusting the pH value of said suspension to a value of from 8 to 10; and then

8 e) adding a magnesium compound.

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1 53. (previously presented) The method of claim 52, further comprising:

2 f) adjusting the pH value to a value between 8 and 10 by adding an alkaline aluminum  
3 compound.

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1 54. (previously presented) The method of claim 52, further comprising:

2 d f) adjusting the pH value to a value between 8 and 10 by adding an alkaline aluminum  
3 compound in combination with a base.

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1 55. (previously presented) A method for producing a pigment, comprising:

2 a) adding a phosphorus compound to an aqueous suspension of titanium dioxide base material,  
3 then

4 b) adding a titanium compound; and

5 c) adding an aluminum compound, and then

d) adding a magnesium compound.

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1 56. (previously presented) The method of claim 55, wherein the magnesium compound added is  
2 selected from the group consisting of magnesium sulphate and magnesium chloride.

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1 57. (previously presented) The method of claim 55, wherein the quantity of magnesium  
2 compound added is 0.1 to 1.0% by weight, calculated as MgO, referred to TiO<sub>2</sub> base  
3 material in the suspension.

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1 58. (previously presented) The method of claim 57, wherein the quantity of magnesium  
2 compound added is 0.2 to 0.5% by weight, calculated as MgO, referred to TiO<sub>2</sub> base  
3 material in the suspension.

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1 59. (previously presented) The method of claim 55, further comprising

2 e) treating the pigment with an added material in order to influence the final pH value of the  
3 suspension wherein the final pH value of the pigment is controlled by the pH and the  
4 quantity of the added material.

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1 60. (previously presented) The method of claim 59, where the added material is a nitrate



2 compound.

1 <sup>50</sup> 49  
2 <sup>49</sup> 50. (Previously presented) The method of claim 50, where the finished pigment contains up to  
2 1.0% by weight NO<sub>3</sub>.